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GUIDELINE
FIRE SAFETY

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INDUSTRIAL
SECTOR

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1. INTRODUCTION

- 1.1 These guidelines recommend basic fire safety requirements for the INDUSTRIAL SECTOR.
- 1.2 In the industrial cluster, activities can be grouped as -
- (a) agro-industry, such as activities in tea mills or sugar mills, or agricultural mechanisation;
 - (b) food processing, such as activities in food processing plants, plants for bottling/canning of non alcoholic/alcoholic drinks, distilleries;
 - (c) workshops for light and heavy engineering work, such as cabinet-making workshops, paint workshops, motor mechanic workshops, coach building workshops, construction workshops; or
 - (d) manufacturing.
- 1.3 The place of work can be accommodated in a wide range of buildings of various designs, sizes and structural materials. The buildings may be single-floor or multiple-floor, with single or multiple occupancy, private residential buildings, built specifically or converted for the purpose.
- 1.4 These guidelines aim at ensuring safety with regard to fire within the workplace in the Industrial Sector.
- 1.5 The promoter or his nominated agent shall be responsible for ensuring compliance with these guidelines.

2 FIRE SAFETY REQUIREMENTS

- 2.1 Fire safety requirements are commensurate with -
- (a) the number of persons involved in the industrial activity;
 - (b) the type of industry and processes involved;
 - (c) the layout, size, design and nature of construction of the place of work.
- 2.2 The main features which are of relevance with regard to fire safety requirements are -
- (a) the means of escape;

- (b) the means available for fighting fire;
 - (b) the means for sounding the alert in case of fire; and
 - (d) the presence on the premises of any dangerous substance stored, used or handled.
- 2.3 Any promoter desiring to develop and invest in the industrial sector shall ensure that the building in which the activity is to be carried out (“the relevant building”) satisfies the requirements in relation to the means of escape, the means available for fighting a fire and for sounding the alert in case of fire and precautions to be taken with respect to any dangerous substance stored, used or handled on the premises.
- 2.4 The promoter shall conduct a fire risk assessment to determine the requirements of fire safety and shall adhere to those requirements specific to his case. (Please refer to Inspection Check List at **Annex**).

3 MEANS OF ESCAPE

- 3.1 Every promoter shall ensure that people who are in the relevant building have the means of escaping of the building safely and quickly in the event of a fire.
- 3.2 The means of escape shall be a structural and integral part of the construction and shall allow people to proceed to a place of safety in the event of a fire.
- 3.3 The means of escape includes exit doors, corridors and staircase which lead to the open air.
- 3.4 A single route shall be accepted as means of escape where -
- (a) the distance to be travelled to reach the final exit is 18 metres in the case of an office and 12 metres in other cases;
 - (b) the route to the final exit is protected and is at least 1.1 metre wide;
 - (c) the floor height does not exceed 9 metres; and
 - (d) the total number of persons in the relevant building does not exceed 60.

Note – “Protected route” means a route to final exits which is rendered safe from heat, smoke or toxic vapours that may be produced, in the event of fire, by the provision of fire-resisting material, fire doors or by pressurisation.

- 3.5 In circumstances other than those specified in paragraph 3.4, an alternative means of escape shall be required.

- 3.6 Spiral staircases and vertical ladders shall not be acceptable as alternative means of escape.
- 3.7 At ground floor level, an exit alternative to the existing one shall be acceptable as an alternative means of escape.
- 3.8 In a building above ground floor level a standard staircase made of metal or other non-combustible material shall be acceptable as an alternative means of escape.
- 3.9 An external staircase shall be acceptable as an alternative means of escape, provided that -
- (a) there is limited opening on the side where the staircase is sited;
 - (b) windows do not open directly on the staircase;
 - (c) materials used are protected against corrosion and slips;
 - (d) the staircase is illuminated during the night.
- 3.10 An emergency staircase shall satisfy the following specifications -
- (a) it shall not be less than one metre wide;
 - (b) treads shall not be less than 225 millimetres;
 - (c) risers shall not be more than 190 millimetres;
 - (d) the angle of descent shall not exceed 45 degrees;
 - (e) there shall be not more than 16 risers in a flight;
 - (f) there shall be not more than 2 flights without a change in direction;
 - (g) all doors giving access to the staircase shall open outwards.
- 3.11 Exit doors, corridors and staircases shall be kept free from obstruction at all material times.
- 3.12 Emergency exit doors shall (except in the case of sliding doors) be constructed so as to open outwards.
- 3.13 Whenever a building is occupied, emergency exit doors shall not be locked or fastened in such a manner that they cannot be easily and immediately opened from inside.

- 3.14 The contents of any room shall be arranged in such a way as to allow free circulation for occupants.
- 3.15 Every exit door affording means of escape shall be marked by a white pictogram of minimum size 100 millimetres on a board with green background.
- 3.16 When the direction to the emergency exit may not be apparent to an occupant, an exit sign with an arrow indicating the direction to the exit shall be displayed.
- 3.17 If occupancy is permitted at night or if normal lighting levels are reduced during working times, exit signs shall be illuminated and emergency lighting shall be provided along escape routes.

4 **MEANS FOR FIGHTING FIRE**

- 4.1 Every promoter shall provide first-aid fire-fighting equipment of suitable type specific to the circumstances of his case, as mentioned below.
- 4.2 First Aid fire-fighting equipment shall include portable fire extinguishers and hose reels.
- 4.3 Four types of portable fire extinguishers using water or foam, or dry powder or carbon dioxide shall be available.
- 4.4 A water fire extinguisher is appropriate for fire involving solid materials normally of an organic nature in which combustion occurs with the formation of glowing embers. (“Class A fires”), e.g. wood, paper, textiles, clothing.
- 4.5 A foam fire extinguisher is appropriate for fires involving liquids or liquefied solids (“Class B fires”), e.g. petrol, oil, thinner.
- 4.6 A dry powder fire extinguisher is appropriate for fire involving solid materials normally of an organic nature in which combustion occurs with the formation of glowing embers, liquid or liquefied solids, gases and metals. (“Class A, B, C and D fires”), e.g. wood, paper, textiles, clothing, petrol, thinner, oil and electrical appliances.
- 4.7 A carbon dioxide fire extinguisher is appropriate for fire involving solid materials normally of an organic nature in which combustion occurs with the formation of glowing embers, liquid or liquefied solids, gases (“Class A, B, C fires”), e.g. wood, paper, textiles, clothing, petrol, thinner and electrical appliances.
- 4.8 These fire extinguishers are available in capacity of 9 litres for water and foam, 2 kg and 5 kg for carbon dioxide, 2 kg, 4 kg, 6 kg and 9 kg for dry powder type.
- 4.9 One 4 kg dry powder or one 2 kg carbon dioxide fire extinguisher is recommended for every 100 square metres or part thereof, according to the risk.

- 4.10 Portable fire extinguishers shall be preferably sited on the line of escape routes, near room exits, inside or outside, depending on the risk.
- 4.11 In multi-storey buildings, portable fire extinguishers shall be sited at the same position on each floor, i.e. top of stair flights or at corner of corridors, where possible, in groups forming fire points, or, where possible, in shallow recess.
- 4.12 Portable fire extinguishers shall be installed in such a way that the carrying handle lies one metre off the floor level.
- 4.13 In large buildings, portable fire extinguishers shall be sited in such a place that no person shall travel more than 30 metres to reach them.
- 4.14 Portable fire extinguishers shall be maintained in operational order at all material times.
- 4.15 The equipment shall be inspected and tested once yearly. A record of such inspection and test shall be kept.
- 4.16 A hose reel installation which is a first aid and fire fighting appliance shall be provided on the premises to extinguish ordinary combustible materials such as wood, cloth, paper and any matter that produces an ash ("Class A fires") where a portable fire extinguisher will be insufficient.
- 4.17 Such an installation consists essentially of a reel, inlet pipe, manual or automatic valve (as the case may be), hose and a shut-off nozzle.
- 4.18 The drum or hose support of the first coil of hose shall be not less than 150 millimetres in diameter. The fittings to which the hose is attached shall be arranged in such a way that the hose is not restricted by additional layer of hose, being placed on it.
- 4.19 The reel shall be of sufficient size to carry the length of hose and rotate around a spindle so that the hose can be freely run out.
- 4.20 If a *manual inlet* valve is provided, it shall be of screw-down type above ground stop valve or gate valve type. It should be closed by running the handle in a clockwise direction. The direction of opening should be indicated by an arrow marked on the handle.
- 4.21 If the valve is *automatic*, the valve should open automatically when the hose is run out of the reel after 4 complete revolutions.
- 4.22 (a) If the diameter of the hose is 19 millimetres, its length shall be not more than 45 metres.

- (b) If the diameter of the hose is 25 millimetres, its length shall be not more than 30 metres.
- 4.23 A nozzle of 4.5 millimetres to 6.5 millimetres capable of providing either jet or spray shall be incorporated at the end of the hose reel.
- 4.24 A hose reel installation shall be connected to a permanent water supply which is under pressure.
- 4.25 In vertical installations (tall buildings) the hose reel shall provide a jet of approximately 6 metres and the output shall be at least 24 litres per minute as follows -
- | Nozzle diameter | Minimum running pressure at the entry of reel |
|-----------------|---|
| 6.5 millimetres | 1.5 bar |
| 4.5 millimetres | 4 bar |
- 4.26 In horizontal installations, the output shall be at least 24 litres per minute.
- 4.27 One hose reel shall be provided to cover every **500m²** of floor space or part thereof.
- 4.28 Hose reels shall be sited in prominent and accessible positions at each floor level adjacent to exits in corridors on exit routes, in such a way that the nozzle of the hose can be taken in every room and within 6 metres of each part of a room.
- 4.29 Fire hose reel assemblies shall be provided with a notice bearing the words “FIRE HOSE REEL” in white letters on a red background. The method of operation of the valve shall be displayed adjacent to each assembly.
- 4.30 Every hose reel installation shall be maintained in operational order at all material times. The installation shall be tested once yearly and a record shall be kept thereof.

5. MEANS FOR GIVING WARNING IN CASE OF FIRE

- 5.1 A fire alarm system is required in the relevant building for one or both of the following purposes -
- (a) to enable people in the building to be informed of an outbreak of fire and evacuate the building before the escape routes are affected by the fire;
 - (b) to enable early detection and mitigate damage that may be caused by the fire by activating fire- fighting resources.
- 5.2 Every promoter in the industrial sector shall ensure that a fire warning system is installed at his place of work if the number of persons exceeds 60 or inflammable substances are stored, used and handled on the premises.

- 5.3 A fire alarm system shall consist basically of break glass manual call points which are wired electrically to sounders/sirens and a control indicator panel.
- 5.4 Break glass call points shall be installed at 1.4 metres above floor level, preferably near exit and emergency staircase. In large buildings, no one shall have to travel more than 30 metres to reach a call point.
- 5.5 Sounders/sirens shall be strategically placed in sufficient numbers and in such a way that the sound is audible throughout the building. The sound shall be distinctive and at least 5 decibel above normal noise on the premises.
- 5.6 The basic system can be enhanced by introducing automatic fire detectors.
- 5.7 Fire detectors are designed to detect one or more of the 3 characteristics of a fire: heat, smoke or flame.
- 5.8 No one type is suitable for all applications and the final choice shall depend on the individual circumstances, as explained below.
- 5.9 Heat or smoke detectors are suitable for most buildings. Flame detectors are mainly used to supplement heat or smoke detectors in high compartments or outdoor wide area storages.
- 5.10 A fire warning system shall be designed and installed in accordance with BS 5839 (British Standard for Fire Alarm System) or any other equivalent standard.
- 5.11 Every component of the system shall be tested in accordance with BS 5839 and maintained in operational order. A record of the test shall be kept.

6. INFLAMMABLE SUBSTANCES

6.1 Liquefied Petroleum Gas – LPG

- 6.1.1 If the quantity of LPG used stored or handled is **below 500 kg** -
 - (a) cylinders shall be kept upright in a well- ventilated place, preferably outside the building and away from any source of heat, combustible materials and electrical circuits;
 - (b) cylinders shall be kept away from exits or areas used for circulation of people. Cylinders shall not be kept under stairways;
 - (c) cylinders shall be kept in areas where they will not be physically damaged;

- (d) cylinders shall be secured to prevent them from falling or being knocked over and shall be on flat and firm surface;
- (e) fittings recommended for the equipment shall be used;
- (f) appliances and accessories shall be maintained in good working order;
- (g) the rubber hose/other connections and regulator shall be in good working condition;
- (h) Rubber hose/tubings and regulator shall be replaced before the expiry date stated on the items and as recommended by manufacturers;
- (i) Empty cylinders shall be kept away from full cylinders;
- (j) A one 4 kg dry powder fire extinguisher shall be provided.

6.1.2 **If the quantity of LPG exceeds 500kg**

- (a) containers, cylinders and tanks shall be designed, fabricated, listed and marked (stamped) in accordance with regulations;
- (b) defective containers, cylinders and tanks shall be returned to the supplier;
- (c) containers, cylinders, tanks and systems shall be secured against accidental dislodgement;
- (d) storage, use and handling areas shall be secured against unauthorised entry;
- (e) containers, cylinders, tanks and system shall be protected from physical damage;
- (f) guard posts or other means shall be provided to protect compressed gas containers, cylinders, tanks and system from vehicular damage;
- (g) containers, cylinders, tanks shall be separated from combustible material, waste, vegetation, source of heat and conditions that present exposure hazard to or from each other;
- (h) containers, cylinders, tanks shall be protected from direct contact with soil or surfaces where water might accumulate, in order to prevent bottom corrosion;
- (i) the gas storage installation shall be protected by a water spray system;
- (j) the layout plan of installation shall be submitted to the fire service to ensure conformity;

- (k) one 9kg dry powder fire extinguisher shall be provided;
- (l) after completion of the project, the installation shall be registered with the Fire Services against payment of a fee of Rs 250.

6.2 **Inflammable Liquids – M/Spirits, Alcohol, Kerosene, etc**

- 6.2.1 Promoters of the industrial sector shall be allowed to use, store and handle inflammable liquids up to a maximum of 200 litres, if the liquid has a flash point of 22.7°C or less, or 400 litres if the liquid has a flash point between 22.7°C to 43°C.
- 6.2.2 If the quantity used/stored or handled exceeds the quantity mentioned in paragraph 6.2.1, the promoter shall keep the liquid in a store constructed for the purpose.
- 6.2.3 The store shall be constructed according to the following specifications -
 - (a) the walls shall be constructed of brick, stone, concrete or other non-inflammable material, the floor of concrete or other impervious material and the roof of reinforced concrete or other non-inflammable material;
 - (b) the store shall be provided with a well-fitted metal sliding door, or a metal door opening outwards of not less than 3.5 millimetres thick, carried on an iron door frame. Such door shall have an all-round overlap of not less than 50 millimetres and shall be fitted with a substantial lock;
 - (c) Window frames shall be constructed of metal and fitted with fire-resisting glass panes or metal sheets;
 - (d) Every store shall be constructed in such manner or surrounded by walls not less than 150 millimetres in height forming a well of such character that the inflammable liquid contained therein cannot escape therefrom;
 - (e) Low and high level means of ventilation shall be provided in the store;
 - (f) The openings shall be protected by non-corrodible wire gauze of not less than 0.9 millimetres;
 - (g) A store shall not be situated in a position that will impede the escape of any person from the premises, or endanger any room, building, or premises in case of fire;
 - (h) Any store with a floor area in excess of 10 square metres shall be provided with at least 2 doors, constructed as described in paragraph (b) above;

- (i) Every store shall be maintained at all times in accordance with the provisions of these specifications.
- 6.2.4 All lights installed shall be of incandescent electric type which shall be enclosed in an outer flameproof fitting and all wiring shall be armoured cable or enclosed in seamless metal tubes, the junctions of which shall be screwed together. All switches, junction boxes, fuses and other electrical equipment shall be outside the store. All armoured cables and seamless tubes shall be efficiently earthed.
- 6.2.5 No person shall use any store, or cause or permit such store to be used, for any purpose other than the storage of inflammable liquid, oils and their containers, or engage in, or cause or permit any other person to be engaged in, any store unless all the doors of the store are fully open and kept entirely unobstructed.
- 6.2.6 No person shall enter any store, or cause or permit any store to be entered, without the express permission of the occupant or other responsible person in charge of such store.
- 6.2.7 Prior to constructing the store, the promoter shall have the plan of the store approved by the Fire Services against a fee of Rs 150/-.
- 6.2.8 After completion of the project, the promoter shall have the store registered at the Fire Services against a fee of Rs 300/-.

6.3 Spraying Room

- 6.3.1 If spraying activities using inflammable liquids or substances are carried out on the premises, the promoter shall adhere to the following requirements -
 - (a) he shall obtain a Certificate of Registration from the Fire Services.
 - (b) he shall submit to the Fire Services for approval. one copy of the plan of the building where spraying is to be carried out , together with a fee of Rs 150.
- 6.3.2 The spraying room shall be constructed in accordance with the following requirements -
 - (a) non-inflammable materials only shall be used in the construction thereof;
 - (b) there shall be installed an exhaust method of ventilation which will remove vapours from, and is capable of changing, air in the spraying room at least 30 times in every hour;

- (c) all exhaust vents leading from spraying rooms or spraying booths shall be so designed and constructed that all vapours are expelled into the open air at a point of not less than 4 metres above the level of the ground and at a distance of not less than 5 metres from the opening to any building and such vent shall be constructed of non-inflammable material;
- (d) no electrical equipment shall be installed in the spraying room other than incandescent electric lights enclosed in outer flame-proof fittings.

6.3.3 Upon completion of the project, the promoter shall obtain a Certificate of Registration from the Fire Services against payment of a fee of Rs 300.

7. MISCELLANEOUS REQUIREMENTS

7.1 Electrical Installation.

- 7.1.1 The design, construction, maintenance or alteration of electrical installations shall be carried out by qualified persons.
- 7.1.2 All electrical systems shall be constructed, installed, protected, maintained, inspected and tested, so as to minimise the risk of fire.
- 7.1.3 All electrical conductors shall be of sufficient size and current-carrying capacity for the purposes for which they are intended.
- 7.1.4 Every electrical joint and connection shall be of proper construction as regards conductance, insulation and mechanical strength.
- 7.1.5 Every installation and every circuit shall be protected by means of fuse, circuit breakers and earthing.
- 7.1.6 Every circuit shall be so arranged as to prevent the persistence of dangerous earth leakage currents.
- 7.1.7 Effective means, suitably placed for ready operations shall be provided to cut off the supply of electrical energy on any electrical equipment, in order to prevent or remove danger.
- 7.1.8 Every installation shall be divided into such circuits as may be necessary to avoid danger in the event of a fault and to facilitate safe operations, inspections, testing and maintenance.
- 7.1.9 Protective devices shall be arranged and identified so that the circuits protected are easily recognized.

- 7.1.10 Cables to be installed on walls shall incorporate a sheath suitably resistant to any mechanical damage likely to occur, or to be contained in a conduit system or other enclosure affording adequate protection against such damage.
- 7.1.11 Cable with the colour combination green and yellow shall be reserved exclusively for the identification of protective conductor and shall not be used for any other purpose.
- 7.1.12 All fixed luminaries and lamps shall be placed or guarded so as to prevent ignition of any material which, in the conditions of use foreseen, are likely to be placed in proximity to the luminaries or lamps. Any shade or guard used for this purpose shall be suitable to withstand the heat from the luminaries or lamps.

7.2 **Housekeeping**

- 7.2.1 Housekeeping, in relation to fire safety, is the day-to-day management of fire hazards to minimise the occurrence of fire.
- 7.2.2 A high standard of cleanliness shall be observed at the place of work.
- 7.2.3 Waste products shall be regularly collected and carefully disposed of. Weed and dry grass shall be removed.
- 7.2.4 Areas in and around the building shall be kept free from accumulated waste materials.
- 7.2.5 A 'No Smoking' policy shall be enforced and 'No Smoking' notices shall be displayed.
- 7.2.6 Walls and fences shall always be kept in good condition.
- 7.2.7 When repair works are being carried out, fire precautions shall be observed and fire protection measures maintained.

8 FIRE PREVENTION

- 8.1 Fire prevention principles and measures are aimed at avoiding the inception of a fire.
- 8.2 They involve the control of fire hazards at the place of work and observance of basic rules to avoid ignition sources coming into contact with combustible materials.
- 8.3 Every promoter of an industrial sector shall ensure that his employees are aware of basic fire prevention measures and strictly observe them at the place of work.
- 8.4 The main causes of fire are -
- (a) faulty electrical equipment/installations;

- (b) smoking material;
- (c) frictional, welding, cutting sparks, naked flames;
- (d) spontaneous combustion;
- (e) arson.

8.5 Fire prevention measures with regard to these causes of fire are as follows -

- (a) electrical installation – the measures are described at paragraph 7.1;
- (b) smoking material – a ‘No Smoking’ policy shall be enforced at the place of work;
- (c) waste disposal – the measures are described at paragraph 7.2;
- (d) inflammable products – the measures are explained at paragraph 6;
- (e) arson –daily patrol is to be exercised and strict surveillance is to be enforced.

9. FIRE PROCEDURE

9.1 A fire procedure outlines the main features of a fire emergency response plan which the promoter in the industrial sector shall establish and implement.

9.2 The plan contains measures to prevent the occurrence of a fire, fire protection measures and the course of action to be taken in the event of a fire.

9.3 The requirements for fire protection have been highlighted in Sections 2 to 7.

9.4 Fire preventive measures have been described in Section 8.

9.5 Action to be taken in the event of a fire includes the following -

- (a) Raise the alarm – anyone who discovers a fire shall immediately inform all his colleagues and neighbours who might be affected by the fire;
- (b) Call the fire brigade – Dial 115
 - Give the brigade precise information concerning the fire, including –
 - (a) your name and telephone number;
 - (b) the exact location of building/site;

(c) the nature of the fire or whether persons are trapped.

(c) Attack the fire - Try to extinguish the fire with the available fire fighting equipment provided **it is safe to do so**.

(d) Evacuate the building –

All persons not involved in fighting the fire shall leave the premises through the nearest exit

- Close the door of the room involved in fire

- Walk – DO NOT RUN

- Do not use elevators, always use the staircase

- Assist the disabled and elderly to an area of refuge or other safe place

- Do not go back in the building for any reason until advised or authorised to do so

9.6 The promoter shall designate responsible persons and assign to them specific tasks as to “who will do what” in the event of a fire.

9.7 The promoter shall ensure that the designated persons are trained in their specific task.

9.8 The promoter shall ensure that the action plan is implemented through a fire drill conducted at least twice a year.

10. FIRE RISK ASSESSMENT

10.1 Ensuring an assessment of fire risks within one’s premises has been carried out is a key part of the responsible person’s role.

10.2 The 5 steps of a risk assessment

10.2.1 The following is a summary of the 5 steps the promoter will need to go through to carry out fire risk assessment within the premises:

10.2.2 Step 1 – Identify the fire hazards within the premises

The promoter will need to identify -

- Sources of ignition, such as naked flames, heaters or sparks.
- Sources of fuel, such as accumulated waste, display materials, textiles or overstocked products.
- Sources of additional oxygen, such as forced air circulation or medicinal or commercial oxygen supplies.

10.2.3 Step 2 – Identify people at risk

The promoter will need to identify any persons who may be especially at risk, such as -

- People working in close proximity to fire hazards.
- People working alone or in isolated areas (such as roof spaces or storerooms)
- Children or parents with babies.
- The elderly or people who are disabled.

10.2.4 Step 3 – Evaluate, remove, reduce and protect from risk

Evaluate the level of risk in the premises. Action should be taken to reduce the level of hazard.

- Replace highly combustible materials with less combustible ones as far as practicable.
- Ensure separation between combustibles and ignition sources.
- Operate a “safe smoking” policy.

10.2.5 Step 4 – Record, plan, instruct and train

In this step, the promoter shall record, plan, instruct, inform and train. The promoter will need to record the hazards and people who have been identified as especially at risk in Step 1 and Step 2.

The promoter should also record what he did about it in Step 3. A simple plan can help him to achieve this.

10.2.6 Step 5 – Review

Every time there is a significant change to the level of risk in the premises, the fire risk assessment shall be reviewed and updated.

11. PRECAUTIONARY MEASURES

11.1 Precautions with machinery

The promoter shall establish a comprehensive maintenance plan to prevent, detect and correct defective or worn equipment and ensure that –

- Installation and maintenance of electrical equipment are carried out by competent electrical contractors;
- Moving parts are correctly aligned and not overloaded;
- Hot surfaces are shielded, especially where close to hydraulic systems;
- Filters and magnetic separators are provided to eliminate objects capable of causing friction spark;
- Drip trays are provided on floor coverings impervious to oil;
- Metal Bins with close fitting lids are provided for oily rags;
- Cleaning solvents for machinery are applied from safety containers;
- Work is planned in such a manner as to limit the quantity of combustible material present;
- Waste and scarp are removed regularly;
- Machines are kept clean.

11.2 Precautions with heating/dry process

Where such activities are carried out, the promoter shall ensure that –

- the plant is designed to provide adequate separation between combustible material and hot surfaces;
- guards and shields are provided where necessary;
- automatic controls are incorporated to keep material in process below their ignition temperatures;
- ventilation system is installed where flammable vapours are given off;
- safety devices are installed to cut off heating, in the event of ventilation failure;
- Explosion relief vents are provided for gas-fired ovens and driers and where there may be explosive concentrations of vapour or dust.

11.3 Precautions with process involving the production of dust

Where dust may be produced, the promoter shall ensure that –

- Dust-producing processes are enclosed and provided with efficient dust extraction systems;
- All potential ignition sources are eliminated, and dust-tight electrical equipment is used in hazardous areas;
- Metal components are bonded together and earthed;
- Plant is kept clean at all material time;
- Work areas are kept free of dust deposits by vacuum cleaning.

11.4 Precautions when packaging

The promoter shall ensure that –

- Packaging departments are separated from production and storage areas by fire-resisting walls and floors;
- Packaging materials are kept to a minimum in packing areas;
- Smoking is prohibited;
- Work and waste removal are planned in such a manner as to limit quantities of combustible materials present;
- Gangways are always kept clear.

12. GUIDELINES FOR ACCOMMODATION OF GUEST WORKERS

Guidelines for the issue of a fire clearance – Fire Safety Requirements

- (1) For buildings used only for the purpose of accommodating guest workers, the following rules shall apply -
 - (a) if the building is up to 200 square metres -
 - (i) a single escape route is acceptable if the final exit can be reached within a maximum travel distance of 9 metres;
 - (ii) the building is not more than 3 floors above ground level and the occupancy does not exceed 50 persons;
 - (b) if the building is more than 200 square metres and the travel distance exceeds 9 metres, there shall be an alternative emergency exit;
 - (c) if the building is more than 200 square metres and more than 3 floors above ground level, an alternative emergency staircase shall be provided.
- (2) One 4 kg dry powder fire extinguisher shall be provided for every floor area of 100 square metres.
- (3) A fire warning system shall be provided if the occupancy exceeds 60 persons.
- (4) An emergency lighting system shall be provided in areas forming the escape routes.
- (5) Cooking and the use of naked flames, e.g. for prayer purposes, shall be prohibited in the sleeping area.
- (6) Smoking shall be prohibited in bedrooms.
- (7) Inflammable liquids and substances / hazardous substances shall not be used or stored in the dormitory, except for liquids and substances used for strictly medical purposes which shall be kept in a fire-resisting metal cabinet.
- (8) Electrical installations not forming part of the normal electrical circuit shall not be allowed.
- (9) There shall prevail a high standard of good housekeeping.
- (10) Safety signs as per MS 109 (Mauritius Standard for Safety Signs) shall be displayed.

- (11) If the lodging is within the work premises, the fire protection measures shall be extended to the lodging accommodation area.
- (12) At least one independent means of escape shall be provided from the lodging accommodation area.

13. LEGISLATION/GOVERNMENT POLICY

1. **Fire Clearances/Fire Certificates are issued after compliance with fire safety requirements, for the purposes of the following enactments -**
 - (a) Occupational Safety, Health and Welfare Act 1988, section 54;
 - (b) Local Government Act 2003, section 100;
 - (c) Education Act, section 10(3)(b)
 - (d) Residential Care Homes Act 2003, section 9(2)(b)(i);
 - (e) Dangerous Chemicals Control Act 2004.

2. **Certificates of Registration are issued under the following enactments after compliance with fire safety requirements -**
 - (a) Inflammable Liquids and Substances Regulations 1953 - GN 179/53;
 - (b) Inflammable Gases Regulations 1962 - GN 32/62;
 - (c) Cinematograph Regulations 1941- GN 242/41.

3. **Ex-post Control**
 - 3.1 If a promoter runs his activity in an existing building it will be inspected to ensure compliance with fire safety guidelines **15 days** after the start of the business.
 - 3.2 Any shortcoming noted will be notified to the promoter and the Chief Executive of the Local Authority for appropriate action.
 - 3.3 If a promoter intends to construct a new building or cause extensive alterations to an existing building, it is advisable that the promoter consults the Fire Services before starting construction.

3.4 For any additional clarifications, the Government Fire Services will be most willing to assist.

Please address your queries to the Chief Fire Officer:

Phone No.: 212 0214, 212 0515, 212 4726

Fax No.: 208 3875

E-mail: gfs@mail.gov.mu

Postal Address: 14 Deschartres Street
Port-Louis

INSPECTION CHECK LIST

1. Occupancy

- (a) For what purpose the building is used?
 - (i) the type of construction;
 - (ii) dimension of building;
 - (iii) access for fire appliances;
- (b) What is the number of persons involved?
- (c) Is there any explosive or inflammable material on the premises?
- (d) Is the method of storage or handling of dangerous goods appropriate?
- (e) Are the electrical and gas installations appropriate?

2. Means of Escape

- (a) Is the means of escape satisfactory?
- (b) Are there sufficient exit door/staircases?
- (c) Is the means of escape free from obstruction?
- (d) Is there sufficient lights/emergency light in the escape routes?
- (e) Can the escape routes be used safely?
- (f) Are there appropriate signs indicating the means of escape?

3. Means for fighting fires

- (a) Is there provided appropriate type/numbers of portable fire extinguishers?
- (b) Is the fire extinguisher maintained/sited properly?
- (c) Is there any other first aid fire fighting equipment installed?
- (d) Is there the need for other first aid fire fighting equipment?

- (e) Is there any fixed fire protection equipment?
- (f) Is there the need for any fixed fire protection system?

4. **Means for giving warning in case of fire**

- (a) Is there the need for fire warning system?
- (b) Is a fire warning system installed?
- (c) If installed, does it operate properly?

5. **Staff Training**

- (a) Are the occupants familiar with the escape route?
- (b) Do they know the evacuation procedure?
- (c) Is the staff conversant with handling first aid fire fighting equipment?